

**REMARKS**

This is in response to the Office Action dated February 12, 2004. New claims 11-14 have been added. Thus, claims 1-14 are now pending.

Claims 1 and 9-10 are objected to for formality reasons in paragraph 1 of the Office Action. It is respectfully submitted that the changes to these claims herein address and overcome any potential issue in this regard.

Claims 9-10 have not been rejected over any prior art. Thus, overcoming of the formality objection discussed above places these claims in condition for allowance.

**General**

For purposes of example and without limitation, certain example embodiments of this invention relate to a method of making a semiconductor device. In particular, certain example embodiments of the instant invention relate to such a method where excessive polishing (e.g., via CMP) of an interlayer insulating film at an edge portion thereof is prevented (or reduced). For example, referring to the Fig. 1 embodiment of the instant application, to prevent (i.e., reduce) excessive polishing of the second interlayer insulating film 6 in the neighborhood of the wafer edge 4, silicon nitride stopper film 3 is formed in advance such that it remains only in a region at the edge of the wafer. Then, the second interlayer insulating film 6 is deposited thereover. CMP is thereafter performed so as to polish the interlayer insulating film 6 as shown in Fig. 1(c), and the stopper film 3 prevents excessive polishing of the interlayer insulating film at the edge of the device.

Fig. 5 illustrates another example non-limiting embodiment of the instant invention, where the stopper layer 17 is formed *over* the interlayer insulating film 16 at an edge thereof. When both films 16 and 17 are polished via CMP, the presence of stopper 17 over film 16 at the edge thereof prevents excessive polishing of the interlayer insulating film 16 at the edge thereof. After CMP, the stopper layer 17 is removed as shown in Fig. 5(c).

Claim 1

Claim 1 stands rejected under 35 U.S.C. Section 102(e) as being allegedly anticipated by Kuehne. This Section 102(e) rejection is respectfully traversed for at least the following reasons.

Claim 1 as amended requires that "a stopper layer is formed only at an edge region of the device so that no layer portion deposited along with the stopper layer remains on the device during the chemical mechanical polishing of the interlayer insulating film at any location other than as part of the stopper layer at the edge region of the device, the stopper layer preventing the interlayer insulating film from being excessively polished by the chemical mechanical polishing at the edge region of the device compared to a remainder of the interlayer insulating film, wherein the stopper layer is formed before or after forming the interlayer insulating film." For example, Fig. 1 of the instant application illustrates a stopper layer 3 that is formed only at an edge region of the device so that no layer portion deposited along with the stopper layer 3 remains on the device during the chemical mechanical polishing of the interlayer insulating film 6 at any

location other than as part of the stopper layer 3 at the edge region of the device. See also Fig. 5 as another example,

Referring to Fig. 4A of Kuehne, the Office Action appears to be contending that 446 at the edge of the device is a different layer than 442 over active regions due to trenches defined therebetween (even though they are part of the same silicon nitride deposited at the same time). In other words, the Office Action seems to be contending that the silicon nitride layer 446 at the edge is separate and distinct from the silicon nitride portions 442 formed over the active regions near the center of the device.

Given this contention by the Office Action, claim 1 has been amended herein to prevent and exclude such a contention. In particular, claim 1 has been amended to prevent the Examiner from being able to argue that portions 442 in Fig. 4 of Kuehne are part of the stopper layer. In particular, claim 1 has been amended to state that "no layer portion deposited along with the stopper layer remains on the device during the chemical mechanical polishing of the interlayer insulating film at any location other than as part of the stopper layer at the edge region of the device." This new language expressly excludes the silicon nitride at areas 442 in Fig. 4 of Kuehne so that the Examiner can no longer rely on the same. Accordingly, it can be seen that Kuehne is entirely unrelated to the invention of claim 1.

Claim 9

Claim 9 also requires that "no layer portion deposited along with the stopper layer remains on the device during the chemical mechanical polishing of the interlayer

KAMIKUBO, Noritaka  
Appl. No. 10/062,543  
May 10, 2004

insulating film at any location other than as part of the stopper layer at the edge portion of the device." Again, Kuehne fails to disclose or suggest this aspect of claim 9.

Claim 10

Moreover, Kuehne is also unrelated to claim 10. Claim 10 requires that the stopper layer be formed "over" an edge portion of the interlayer insulating film. Keuhne teaches the opposite of this since silicon nitride 446 in Keuhne is formed under (not over) the alleged interlayer insulating film 448. Thus, claim 10 clearly defines over Keuhne.

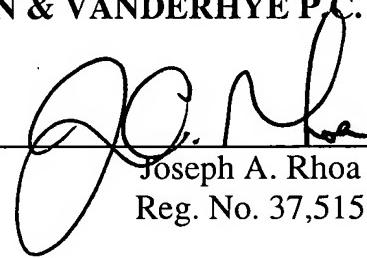
Conclusion

For at least the foregoing reasons, it is respectfully requested that all rejections be withdrawn. All claims are in condition for allowance. If any minor matter remains to be resolved, the Examiner is invited to telephone the undersigned with regard to the same.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By:



Joseph A. Rhoa  
Reg. No. 37,515

JAR:caj  
1100 North Glebe Road, 8th Floor  
Arlington, VA 22201-4714  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100